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ORIGINAL PAPER

Poverty and institutional management stand-off: a restoration and conservation dilemma for mangrove forests of Tanzania

Mwita M. Mangora

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Abstract Mangrove forests of Tanzania are reserved by law, but the capacity to effectively enforce this institution has remained far from reach and mangrove forests continue to be exploited as cheap sources of wood and forest land for other uses. Often, the rural poor who depend on mangroves for their subsistence are pointed out by the state institutions as culprits of the degradation. Promisingly though, this paradigm is being offset by the emerging positive view about human proclivity for caring and nurturing common resources. Traditional and community based forest management practices are emerging as appropriate alternatives to state control and institutional arrangement for ensuring sustainable management of forest resources. Nonetheless, community based management has not yet been robustly implemented for mangrove forests in Tanzania. Retrospectively, this paper argues that nationalization of mangrove forests has not been successful in reversing mangrove degradation. The experiences have instead been the frictions between people and the state, as desperate rural poor continue to plunder on and make a living at the expense of mangrove forests. The paper exemplify how policy failure, weak or dysfunctional state institutions in Tanzania compounded by little participatory awareness and self commitment are ruining the restoration and conservation initiatives.

Keywords Community participation · Forest management institutions · Mangroves · Poverty

M. M. Mangora (✉)
Institute of Marine Sciences, University of Dar es Salaam, Mizingani Road, P.O. Box 668, Zanzibar, Tanzania
e-mail: mangora@ims.udsm.ac.tz; mmangora@yahoo.com

Introduction

Mangroves are regarded as naturally resilient along the land-sea interface. However, mangrove forests have become the most threatened ecosystem due to a varied range of factors of both natural and anthropogenic origin. Both local and commercial harvesting for building and fuel wood and transformation into other land uses and coastal developments have severe impacts on mangrove forests (Adhikari et al. 2010; Barbier 2007; Feka and Manzano 2008), and given their accelerating rate of loss, Duke et al. (2007) and Polidoro et al. (2010) predict that mangrove forests may at least functionally disappear in as little as 100 years. Unfortunately, the public is rarely aware of this alarming loss of mangrove forests. Though legally declared as territorial (state) forest reserves (Holmes 1995), mangrove forests of Tanzania have not been spared. It is only in the last two decades that better socio-ecological knowledge to understand and recognize the value of mangroves has been brought up (Semesi 1998; Semesi et al. 1998; Shunula 2002). Otherwise, mangrove forests have been erroneously designated as waste coastal wetlands (Kairo et al.



Fig. 1 Uncontrolled clear felling of mangrove forests for charcoal making (*top*) and timber (*bottom*) is widespread in Ruvu Estuary mangrove forest. Photo taken in 2008 by M. M. Mangora

2001; Walters et al. 2008), receiving little attention on management worldwide (Adeel and Pomeroy 2002; Ellison 2008). This wrong categorization has continued to expose mangrove forests to easier exploitation and as cheap source of land (Ellison 2008; Walters et al. 2008). The area coverage of mangrove forests has thus been shrinking over the years even with the strict management institutions. In Tanzania for example, in addition to the physical observations on prevailing degradation in some parts (Fig. 1), the overall recorded reduction of about 6% of areal extent deduced from reports by Semesi (1992) and Wang et al. (2003) for the mainland Tanzania in a span of 10 years should be viewed with much concern. It is a reflection of the state institutional management failure (Kulindwa et al. 2001; Tobey and Torell 2006), although there are some spots with recorded areal increase (Verheij et al. 2004; Wang et al. 2003).

Empirically yet, meagre efforts (often localized) are in record to have been made to manage, restore and conserve the patches of degraded mangrove forests in various areas of the country (Nurse and Kabamba 1999; Verheij et al. 2004). Intrinsically, the coastal rural poor of Tanzania like in many other countries (Bosire et al. 2008) have remained unaware of how these restoration and or conservation initiatives live them up from the vicious poverty while the nationalized institutional management frameworks continues to undermine their livelihood potentials (Barbier 2007). But, why are there trade-offs between the rural poor and the institutions managing mangrove resources which support their livelihoods? This paper attempts to highlight on the persistent need to integrating livelihoods and institutional frameworks in designating restoration and conservation recipes for sustained win–win compliance. To deliver on this, first an overview of the mangrove forests of Tanzania is briefly described. Second, an analysis of the poverty and natural resource (mangrove forests) nexus is presented. Constraints of mangrove management institutions in Tanzania are discussed to demonstrate how state institutional incapacity negates on the restoration and conservation initiatives. From this discussion, an outline of the key stand-off issues emanating from the trade-offs between rural poor livelihoods and management institutions are drawn.

Mangrove forests of Tanzania

Distribution, goods and services

Mangroves occur almost along the entire coastline of Tanzania which span for over 1,000 km from the border with Kenya in the north to the border with Mozambique in the south (Fig. 2). In the mainland Tanzania, Semesi (1992) reported that the total area covered by mangroves was about 115,475 ha including those of the island of Mafia (Table 1). This account for only 0.3% of the total forested land in Tanzania (Table 2). However, shortly over a decade later Wang et al. (2003) reported a declined area coverage of mangroves to about 108,138 ha. About 50% of the mangrove area is confined in the Rufiji River Delta which is the largest single mangrove forest in the eastern Africa region. Other important mangrove areas include the river estuaries and sheltered lagoons of Tanga, Pangani, Wami and Ruvu and Ruvuma (Mtwara) (Fig. 2). There are nine species of mangrove trees that occur in mainland Tanzania. The most common species are *Rhizophora mucronata*, *Avicennia marina* and *Sonneratia alba*. Others are *Bruguiera gymnorrhiza*, *Ceriops tagal*, *Heritiera littoralis*, *Lumnitzera racemosa*, *Xylocarpus granatum*, and *X. moluccensis*.

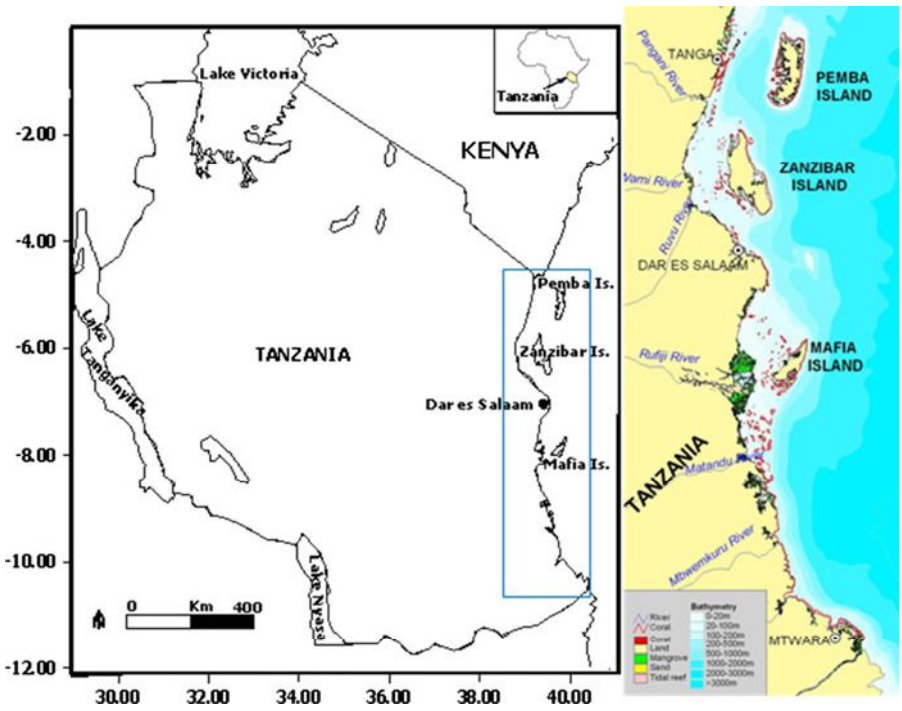


Fig. 2 Map of Tanzania coastline showing important mangrove areas and other coastal marine ecosystems

Table 1 Mangrove forest area coverage along the coast of mainland Tanzania as designated in the national mangrove management plans

District/region (block)	Area quoted from previous inventory (ha)	Area occupied by mangroves found in 1989 inventory (ha)
1. Mkinga and Tanga	9996.1	9403.3
2. Pangani	600	1755.6
3. Bagamoyo	1,499	5635.8
4. Dar es Salaam		2168.2
5. Kisarawe	3,498	3858.3
6. Rufiji	40,470	53254.8
7. Mafia	404.7	3472.9
8. Kilwa	13994.5	22438.7
9. Lindi	1,416	4546.5
10. Mtwara	7996.9	8941.5
Total	79875.2	115475.6

Source Semesi (1992)

Although mangrove forests contribute a small proportion of the forest resource in Tanzania, they remain pivotal on the livelihoods of rural coastal communities (Semesi et al. 1998; Ngoile and Shunula 1992). Mangroves are an item of trade and they have for long been a source of employment and income for the rural coastal communities. Table 3 briefly summarizes common local material uses of some mangrove species in Tanzania. Mangrove areas have well been exploited for other land use systems like the construction of solar evaporation pans for the production of salt and other infrastructural development and recreational facilities. In the major river deltas like the Rufiji and Ruvuma, mangrove areas are turned into rice fields.

Loss of mangrove forests and weak institutional management

Apart from the natural calamities (Erftemeijer and Hamerlynck 2005) and anthropogenic pressures (Fig. 1; Mangora 2007), many of the problems and causes of mangrove loss stem from state level failures in policy, management and enforcement of the so branded protection measures (Kulindwa et al. 2001). For example, although there was an instituted government ban on all mangrove forests of mainland Tanzania in 1987 to allow for an inventory exercise of mangrove forests in the country, aiming at preparing a national management plan (Semesi 1992), yet, illegal

Table 2 Proportional distribution of forest area (hectares in thousands) by type in Tanzania

Forest type	Area (ha)	Proportion (%)
Forests (other than mangroves)	1,141	3.4
Mangrove forests	108	0.3
Woodlands	32,299	96.3
Total	33,555	100.0

Source URT (1998), Wang et al. (2003)

harvesting continued unabated due to ineffective enforcement (Kulindwa et al. 2001).

Because there has not been any recent data to indicate the loss of mangrove forests in Tanzania, the difference of an estimated 115,475 ha by Semesi (1992) and that of 108,138 ha by Wang et al. (2003) remains the only reliable indication of the vast decline of mangrove forests at the national level. The exemplified magnitude of mangrove clearance in Ruvu (Fig. 1) is just a clue of the lesser known rampant degradation. Loss of mangrove forests is not confined to the disappearance of the mangrove trees, but entail compounded degradation of habitats for other forms of life in the ecosystem.

Rural poverty and mangrove forests

It is advocated that there is a clear cause–effect relationship between poverty and natural resources degradation. Proponents of this school account that natural resources degradation leads to widespread poverty and that poverty is a habitual cause of degradation. Culturally, forests in rural areas are significantly used for subsistence and provide important inputs to agriculture. While the understanding of most of the rural poor is limited to the simple view of forests supplying goods and services, the realities should gauge our understanding towards recognizing the strategic role that forests play in helping the poor cope with poverty (Adhikari et al. 2010; Mahanty et al. 2006). It is this traditional dependency though that is at the top of the list of factors that is attributed to degradation of mangrove forests (Walters et al. 2008). While struggling for wellbeing, the vicious cycle of poverty-resource degradation-increased poverty is perpetuated. This characteristic direct and positive correlation between human development and natural resource depletion (Swanson 1997) remain an eminent feature in developing countries where low levels of development sanction the poor to continue rely on their natural resources. People therefore; destroy their life support systems without actually intending to. This is further aggravated because people have maintained the feeling that there are no incentives or benefits to protect or improve mangrove habitats under the current management scenario even if they would have had the willingness (Adhikari et al. 2010).

A pertinent concern here would be how then we can save the mangroves while enhancing the rural poor to cope with or even move out of poverty. Adhikari et al. (2010) and Mahanty et al. (2006) emphasize on the potential of community involvement in forest management as a viable vehicle for poverty reduction, although that is at most partially realized from the conservation initiatives in developing world. In Tanzania, community participation has become the most important approach within the forestry sector following its inclusion in the National Forest Policy of 1998, Land Act of 1999 and the Forest Act of 2002. This revamped move to designate responsibility of forest management to local communities however, remains bleak (Kulindwa et al. 2001). Pragmatically, building

Table 3 Common local uses of some mangrove species of Tanzania

Scientific name	Local name	Common uses
1. *Rhizophora mucronata*	Mkoko	Building poles, bark for tannin, fuel wood, grain-sifting baskets, medicine (leaf extract)
2. *Ceriops tagal*	Mkandaa	Building poles, bark for tannin, fuel wood, fencing
3. *Bruguiera gymnorrhiza*	Msinzi	Building poles, telephone poles
4. *Avicennia marina*	Mchu	Trunks for canoes, carts, masts, bedsteads, chairs, handles, fodder (foliage)
5. *Sonneratia alba*	Mpira	Fuel wood, construction timber, shoots for fishing-net floats, chow masts
6. *Xylocarpus granatum*	Mkomafi	Chows, furniture, medicine (fruit/seed powder extract)
7. *Heritiera littoralis*	Msikundazi	Trunks for chow masts, construction timber, furniture, boats

interest in poverty reduction to enhance sustainable resource management and strengthen the rights of communities to access and manage forests to improve livelihoods and resource conditions is one thing. But, whether this translates into poverty reduction in practice, particularly for the most marginalized groups in rural coastal societies is another thing altogether. So, the dilemma persist in poor countries on account of building a strong synergy of community participation and poverty reduction, at least in theory (Adhikari et al. 2010; Tobey and Torell 2006). Conservationists continue to blame the poor and that they should be made to refrain from their acts in forests degradation. This irrational discrimination (Adhikari et al. 2010), do not however serve the mangrove forests because they remain prone to elite capture (often outsiders) who are able to deal with the high transaction costs facing the poorest of the poor in harnessing high-value goods such as timber from their local mangrove forests. This tenet of outsiders reaping the benefits while exacerbating resource degradation is among the most significant barriers to pro-poor forestry, because in open access scenarios the poor have easier access, albeit to a degraded resource. Ownership of forest lands, and access and right to use the forests are therefore important for a balanced and equitable development and accorded care to the mangrove forests.

Policy and legal issues: management trade-offs

Legal and policy based mechanisms often encounter a range of local conditions and unique dilemmas during implementation. Li (2002) demonstrate that local realities are more complex than what policy models theoretically suggest. In Tanzania, the shortfalls as outlined hereunder have remained and viewed by the public as state sanctioned pillars for the sustainable management regimes which deprive the rural poor coastal communities their local livelihood banks.

Lost sense of participation and ownership

Participation is a broad concept that can mislead if not well conceptualized in the conservation agenda. For instance, Brechin et al. (2002) iterate a couple of questions that need to be cleared at least to legitimize participation: Who participates? What are the demands and expectations? Do they have capacity to participate? Will they participate in all aspects of decision making or in only selected phases? How do participants benefit from being involved? So, participation in this case includes institutions and laws, property and tenure rights etc. (UNDP et al. 2003) through which decisions are made about resource management (Adhikari et al. 2010). How these questions are tackled is socially constructed within the bounds of existing social and cultural norms. In other words, what may have worked in one time and place to produce answers to those questions may not work in another. For Tanzania, the diversity of participants makes negotiation a highly complex undertaking because of the vast cultural, class, ethnic, gender, and other differences among participants where many communities present vast heterogeneity.

From this, there are several institutional problems which compromise and exacerbate the dilemma in the management and conservation of mangrove forests in Tanzania. The legal jurisdictional frameworks in the management of natural resource in Tanzania are geared towards the control of human activities that threaten the natural resources. Walker (2004) suggest otherwise that a focus on forests (the trees) alone carries the risk of emphasizing forest resource rights at the expense of other potential assets for the poor, such as agricultural land This can trap the poor into forest dependency, rather than widening their range of assets and livelihood options. This overdependence on mangroves perpetuates communities' irresponsibility and creates the growing sense of disownership of the resources.

Gazettement and access for utilisation

Overall, the government owns all land and the resources it holds in Tanzania. Citizens have user rights, but not ownership rights. But in practice, issues regarding natural resources are not so much about ownership (which has proved unsuccessful), but rather accessibility and quality of the resources. As regards to mangrove areas, local communities are concerned that these areas are not accessible to them for a variety of uses (Francis et al. 2006; Kulindwa et al. 2001). The state is biased on emphasizing on the control and prohibit model of management conservation which advocates that unless natural resources are strictly in the domain of private or state property, their fate is an

inevitable ruin. Traditional interests of the people have not been adequately addressed (Francis et al. 2006). This is a typical conceptual panacea based on the concept of the tragedy of the commons (Hardin 1968), which has over the years proved invalid (Ostrom 1990, 1999). Emerging concepts avail that closer examination of the actions of poor communities who depend on natural resources for their daily livelihoods has brought forward a more positive view about human proclivity for caring and nurturing common resources.

Among the major institutional setbacks in delivering the management plan for the reserved mangrove forests is the lack of capacity to enforce those management rules and regulations. As remarked above, most policies on management of natural resources which already are in conflict, tend to overemphasize control and prohibitions albeit without the means and capability to implement them. For example, it is noted that in Bagamoyo district where the two deltas of Ruvu and Wami are found, the district forestry department has severe shortage of working manpower and facilities. Effective monitoring requires the officers to have regular visits to the mangrove forests to monitor and enforce the laid down regulations but due to lack of proper and timely funding, this is not done. Another factor which frustrates effective implementation, monitoring and enforcement is the characteristic frequent changes in the administrative setup which disrupt the continuity and institutional memory in the management of natural resources. It is often a drawback that throughout these transitions, priority is given to the revenues from forestry resources rather than the management (Kulindwa et al. 2001). In essence, there are no forums where both the central and local governments can discuss issues of mutual interest concerning the management of mangrove forests, yet the latter are expected to provide support to the Ministry to ensure that mangrove forests are in good order.

Political interference in technical matters is also an issue of concern in management of mangrove forests. Compounded by bureaucratic syndrome, political considerations override all decisions and hence they immensely frustrate management efforts due to inconsistent jurisdictional mandate and sectoral contradictions (World Bank et al. 2004). For example, while mangrove forests are gazetted forest reserves managed under the Ministry of Natural Resources and Tourism, the Ministry of Lands and Housing issues permits to developers to construct tourist hotels in mangrove areas or to villagers to settle and farm within forest reserves. Similarly, the other Ministry of Energy and Minerals issue permits for salt making in the mangrove areas. Interestingly, even within the same Ministry of Natural Resources and Tourism, there are policy and legal jurisdictional contradictions where it is found that the Fisheries Division issues permits for large scale prawn farming in reserved mangrove areas without consultation and consent with the Forestry and Beekeeping Division.

Management of mangrove forests

Mangrove management plans

The argument around the concept of the tragedy of the commons (Hardin 1968) is that individual interests tend to overcome collective interests. It is on this ground that centralisation of the natural resources management by the state or privatisation draws its rationale in developing management plans. Critics however are growing up in the sense that as the command and control of the use of natural resources is vested in government organs, and imposing solutions for resources use from external authorities, compromise the basic right of participation of local communities (Ostrom 1999).

Because of the constrained economies in developing countries, it has become a burden for these states to viciously continue to depend on foreign aid to develop and implement strategies and plans for own natural resources. Consequently it has become habitual in developing countries that donor agencies are increasingly holding stake in the dilemma on how local livelihoods are taken into account when instituting conservation and management initiatives. Governments in these poor nations have often been carried away to adopt the western style of management plans which fall short in the rural poor societies. For example, in 1988 the government of Tanzania and the western donors, without adequate consultation with local communities, established the Mangrove Management Project which entailed developing mangrove management plans and instituting mangrove restoration campaigns (Semesi 1992). Because of the unfortunate oversight on the need to fully bring in the local communities, the developed management plans

and especially instituted restoration campaigns fell short of expectations. Cease of donor funding meant closure of the programmes. Local communities still question the sustainability of the project and function of such bodies as the advocated Village Natural Resources Committees which were being capacitated by subsidies from the donor fund. The role of these committees was primarily vested on promoting community participation in mangrove conservation in their respective villages and overseeing adherence of village natural resources use by-laws. Unfortunately, with the phasing out of the donor funding in capacitating the functions of these committees through village governments, they have barely become redundant. Local district councils which are entrusted to carryover the functions of the management plans fail to fulfil financial needs of these local bodies. What is observed for example in the restored patches in the Ruvu estuary mangroves is a ruin of restoration (Mangora 2007) where local people have, because of the failing institutional management, continued to plunder on mangrove forests as cheap source of wood for fuel and timber (Fig. 1). The rate of mangrove clearance remains high and in some places even the replanted areas are not spared (Mangora 2007).

Mangrove forest restoration and conservation

For already altered or degraded mangrove forests, planting is often thought of as a desirable, feasible, easiest and cheapest conservation strategy in restoring the mangrove ecosystem. But, in practice little attention has been given to anything but the biological or ecological (growth) functions of the trees (Field 1998; Iftekhar and Takama 2008). This sort of poor, short term and greedy practice for restoration management have often complemented to the failure in the use of mangrove ecosystems for sustainable yield of natural products like timber, charcoal and fisheries. Apart from having in place a comprehensive strategy based on sound biological and ecological principles and techniques, an effective restoration has to bring in local community to actively participate in cooperation with local governments in accordance with the principle of co-management (Walters 1997).

While the need for restoration of degraded mangrove forests and their subsequent conservation is not to be an overstated panacea at regional or global levels (Iftekhar and Takama 2008), weak and incapable forest management institutions which often undermine the needy societies at local scales are compromising the future and fate of especially already meagre restored mangrove forest lands in Tanzania (Mangora 2007; Nurse and Kabamba 1999; Verheij et al. 2004). It is increasingly now becoming a common practice of local communities to take advantage of these weak and unwelcoming institutional management settings to make their today's living at the expense of the mangrove forests because no one is certain of tomorrow's alternative.

The theory and practice of restoration and conservation in developing countries are falling short of expectations with a lower ratio of synergies:contradictions. For instance, the context of environmental framework for the National Forest Policy of Tanzania of 1998 assigns major responsibilities to the state institution and NGOs to assist local communities by making them aware of their own situation and supporting them to become responsible for their own destiny. As, Shunula (2002), Kairo et al. (2001) and Blomley and Ramadhani (2006) emphasize on greater public awareness and participation, the fundamental prerequisite for this conceptual framework of sustainable development through natural resources conservation is broad public participation on issues related to future of the natural resources that have stake on communities' livelihoods. This however remains to be a theory on paper as the practising institutions remain incapable of delivering for reasons of both material and logistical inadequacies (Semesi 1992; Kulindwa et al. 2001).

Inherently, social and economic development practitioners fail to come into terms with ecologists and the opposite is also true (Janzen 1992). The ultimate of the battle is the enhanced suffering of the rural poor who consequently turn to be the culprits of the ecological degradation. Hardily there can be found a vivid case study of the community based mangrove management initiative in Tanzania. One sited example would be the Kipumbwi mangrove management which is nevertheless of a small scale dealing with only a 416–422 ha portion of a mangrove forest reserve in Tanga region northern Tanzania (Iddi 2002; Nurse and Kabamba 1999; Verheij et al. 2004) where the authors conclude that it is much easier to build on a successful indigenous institution, as functioning organisational and resource management systems may already be in place.

The dilemma

People versus natural resources

The first and foremost dilemma is when management institutions tend to treat people and the natural resources as separate ecological entities (Box 1). This is very characteristic in developing countries where natural ecosystems have for long been considered to be jeopardized by human use and thus exclusive management thought to be rational. But, Walters (1997) iterates three important arguments which give light as to why exclusivity in management and restoration of degraded natural resource ecosystems has not been a feasible choice in developing countries. First, restoration and management is pragmatic needing as much to address the human element (Kairo et al. 2001) which either sustain or impede desired functional ecosystem (Pickett and Parker 1994). In fact people are assets to restoration and management (Walters 1997). Second, the moral imperative is that ecological restoration and management ought to benefit the economically impoverished rural people who depend on the direct exploitation of these natural resources for their livelihoods. With the forestry scenario, forests for instance, live for people as people live on forests. People are ought to take charge to ensure forests live for them as forests are not able to take charge to ensure they live for people. Notions of having pristine systems in exclusivity are now being questioned as some revelations suggest that past human actions had in fact helped to maintain and increase local biodiversity (Brandon 1996).

Third, there is an increasing recognition of the human proclivity for caring and nurturing the commons. People are inextricably part of nature and thus their natural presence should enhance the inherent quality and value of the natural resources. Those entrusted with powers to make policies, declarations and legislations on forests, often forget the people who live with the forests. Empirically, livelihoods of these people are never governed by the policies, declarations or the legislatives that are made, rather the dynamics of local resource bases from which they draw.

Institutional contradictions and conflicting interests

Conflicting or non-functioning government management systems and overlapping jurisdictions are serious policy problems. In practice, when legislations are enacted, the responsible Ministry is required to develop relevant strategy for implementing the legislation through development of regulations and management mechanisms. This process requires resources and expertise, lack of which often results into weak or non-translation of the laws and their enforcement. Unilateral translations of the laws have in some cases developed into conflicts (Blomley and Ramadhani 2006). This sectoral disintegration is also compounding to the failure of collective responsibility with enhanced conflicts of interests.

There is no overall existing authority which coordinates conflicting interests concerning licences (for harvesting natural resources) and land titles. Issuance of these permits and documentations concern an array of government departments like Division of Forestry and Beekeeping, Divisions of Fisheries, Ministry of Lands, Ministry of Water, Ministry of Energy and Minerals etc. For example, in the mangrove areas, several institutions are involved including those responsible for mining and salt making, land use (Ministry of Lands), forestry (Ministry of Natural Resources and Tourism), environment (Vice Presidents Office) and the local governments (District and Village Councils). The interplay of activities

Box 1 Conservation versus people and livelihoods: a balance in dilemma (Brechin et al. 2002; Myers et al. 2000)

The people versus natural resources (biodiversity) nexus is compounded by the fact that most areas that are considered to be of high priority biodiversity "hot spots" are also social and political "hotbeds". These rural areas often feature high levels of poverty, insecure land tenure and landlessness, unstable and/or undemocratic political systems, and histories of state-sponsored repression. Repressively yet, modern legal institutions that govern management of protected areas include regulations that contravene the customary use practices of the rural poor. In the absence of concerted negotiation, enforcement of protected area regulations in such a situation is viewed as illegitimate by local resource users. The result is most likely noncompliance with the law. In other words, since conservation is a human organizational process, the goal of biodiversity protection (pro-nature) depends on the strength and commitment of social actors (pro-people).

influenced by policies and regulations from these institutions, if not well coordinated, often do conflict with each other due to different immediate objectives and lack of harmonisation. Even with the management plans in place (Semesi 1992), jurisdictional conflicts are still eminent. These sort of jurisdictional ambiguities over mangroves have also been reported in other countries (Walters et al. 2008). Whereas the Forestry Division designate all mangrove forests as reserves, the Fisheries Division issues permits for the development of prawn farms and the Ministry of Industries and Trade issues permits for the extraction of salt in the same designated mangrove forest reserve areas. Notwithstanding, national regulations dealing with conservation are set aside in favour of short term gains of private investors and business people, at the expense of society's interests in the long term. These inherent contradictions over mangroves conservation versus promotion of economic activities continue to discourage local people in mangrove areas.

The gap between policy and practice

A gap still exists between the practice at the resource user level and the expected implementation of policies (Ellison 2008). The gap between policy and practice is, in part, a function of traditionalist approaches to forest management. The advocated wider societal power shifts from the centre to the periphery, is negated by the inevitable struggles against the devolution of authority, which is irrationally equated with the loss of power and status (Kajembe and Kessy 2000). Community based conservation therefore are management strategies which challenges fundamental power relations between the state and its citizens (Kajembe and Monela 2000). In the context of practicing these institutional and social power relations, there seem to naturally be, and will continue to be, some resistance, despite enabling policy and political support for community participation, unless community social cultural and economic coherence are given due recognition (Iddi 2002).

Conclusions

The survival of the mangrove forests of Tanzania is in doubt. Policy wise there is an urgent need for revision of the current policy to provide guidance for planned and coordinated institutional action and an organizational set-up which can meet these tasks. There is still inadequate information about the important socio-economic characteristics, such as trends and patterns in resource use and economic development, land use and ownership and infrastructure, which ruin the integrity of mangrove forests. This entails also the need to develop national and local scenarios of their future development. Research and analysis of policy and institutional frameworks are needed to address these shortcomings. For example, indigenous knowledge and traditional management systems need to be understood and evaluated for an efficient incorporation.

Promotion of nationalization of mangrove forests has not solved the problem of resource degradation and overexploitation. It has in essence deprived many rural households of their livelihoods. For this a call is made that alternative development approaches need to be devised so that those societies which are highly dependent on mangrove biodiversity for either subsistence or development are enabled to continue to do so sustainably. Awareness of the functional ecological links between mangrove ecosystems and resources such as fish is crucial to winning management support. The instillation of a sense of ownership of the resources by the local population and their legal empowerment so that they are able to institute and execute control measures on their resources are also essential components in the process aimed at achieving full community support for the sustainable utilization and management of the mangrove resources.

Diversification from management alone to include provision of economic alternatives and opportunities for local communities that will discourage them from irresponsible harvesting of the resources is pragmatic to curb the loss of mangrove resources. To efficiently deliver on this, negotiations between the central and local governments on one side and the people on the other must be undertaken to for example, identify suitable alternatives. This is important because, for instance, farming lands in mangrove areas are often regarded as degraded areas which require restoration. So, displacing farmers from these farm lands will require special consideration for those who will continue to rely on mangrove areas for farming as not all farmers can access alternative farm lands.

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